

CLAIMS

What we claim is:

- 5 1. A cushion backed construction for floor coverings such as carpeting or carpet tile, comprising: a primary carpet, a rebond foam cushion disposed at a position below said primary carpet, a mass of polymeric adhesive material disposed intermediate said primary carpet and said foam cushion and a layer of reinforcing material disposed within said mass of adhesive material such that at least a portion of said mass of adhesive material extends away from both sides of said layer of reinforcing material.
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2. The invention as recited in claim 1, wherein the polymeric adhesive material comprises a hot melt adhesive.
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3. The invention as recited in claim 2, wherein the primary carpet is characterized by a face weight of less than or equal to about 15 oz/yd².
4. The invention as recited as recited in claim 2, wherein the hot melt adhesive is present at a level of less than or equal to about 50 oz/yd².
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5. The invention as recited in claim 4, wherein the hot melt adhesive is present at a level of about 36 – 50 oz/yd².

6. The invention as recited in claim 1, wherein the rebond foam cushion is characterized by a density of about 25 lbs. per cubic foot or less.

5 7. The invention as recited in claim 6, wherein the rebond foam cushion is characterized by a chip size of about 10 mm or less.

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8. The invention as recited in claim 7, wherein the primary carpet is characterized by a face weight of less than or equal to about 15 oz/yd².

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9. The invention as recited in claim 1, wherein the polymeric adhesive material comprises bitumen based hot melt adhesive.

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10. The invention as recited in claim 9, wherein the rebond foam cushion is characterized by a density of about 25 lbs. per cubic foot or less.

11. The invention as recited in claim 9, wherein the primary carpet is characterized by a face weight of less than or equal to about 15 oz/yd².

20 12. The invention as recited in claim 9, wherein the bitumen based hot melt adhesive is present at a level of less than or equal to about 50 oz/yd².

13. The invention as recited in claim 12, wherein the bitumen based hot melt adhesive is present at a level of about 36 – 50 oz/yd².

14. The invention as recited in claim 1, wherein the polymeric adhesive material comprises a polyolefin based thermoplastic hot melt adhesive.

5 15. The invention as recited in claim 14, wherein the primary carpet is characterized by a face weight of less than about 20 oz/yd².

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16. The invention as recited in claim 15, wherein the rebond foam cushion is characterized by a density of about 25 lbs. per cubic foot or less.

10 17. The invention as recited in claim 14, wherein the polyolefin based thermoplastic hot melt adhesive is present at a level of less than or equal to about 50 oz/yd².

15 18. The invention as recited in claim 17, wherein the polyolefin based thermoplastic hot melt adhesive is present at a level of about 36 – 50 oz/yd².

19. The invention as recited in claim 1, wherein the polymeric adhesive material comprises a polyurethane hot melt adhesive.

20 20. The invention as recited in claim 19, wherein the rebond foam cushion is characterized by a density of about 25 lbs. per cubic foot or less.

21. The invention as recited in claim 20, wherein the primary carpet is characterized by a face weight of less than or equal to about 15 oz/yd².

22. The invention as recited in claim 19, wherein the polyurethane hot melt adhesive is present at a level of less than or equal to about 50 oz/yd².

5 23. The invention as recited in claim 22, wherein the polyurethane hot melt adhesive is present at a level of about 36 – 50 oz/yd².

24. The invention as recited in claim 1, wherein said polymeric adhesive material comprises a thermosetting adhesive.

10 25. The invention as recited in claim 1, wherein said layer of reinforcing material comprises a porous scrim.

26. The invention as recited in claim 25, wherein said porous scrim is formed of glass.

15 27. The invention as recited in claim 25, wherein said porous scrim comprises an open weave textile structure.

20 28. The invention as recited in claim 27, wherein said open weave textile structure consists essentially of polyester.

29. The invention as recited in claim 1, wherein said layer of reinforcing material is of a non-woven construction.

30. The invention as recited in claim 29, wherein said layer of reinforcing material comprises a plurality of entangled glass fibers.
31. The invention as recited in claim 29, wherein said layer of reinforcing material comprises a plurality of entangled polyester fibers.
32. The invention as recited in claim 1, wherein said mass of polymeric adhesive material substantially permeates and covers the layer of reinforcing material and extends in bonding relation between said primary carpet and said rebond foam cushion such that said primary carpet and said rebond foam cushion are adhesively bonded to one another by said mass of polymeric adhesive material.
33. The invention as recited in claim 32, wherein said primary carpet is a tufted carpet and wherein said mass of polymeric adhesive material extends between said rebond foam cushion and an adhesive pre-coat at the underside of said primary carpet.
34. The invention as recited in claim 33, wherein said adhesive pre-coat comprises a latex adhesive.
35. The invention as recited in claim 32, wherein said primary carpet is a bonded carpet and wherein said mass of polymeric adhesive material extends between said rebond foam cushion and a woven substrate layer at the underside of said primary carpet fabric.

36. The invention as recited in claim 32, wherein said primary carpet is a bonded carpet and wherein said mass of polymeric adhesive material extends between said rebond foam cushion and a non-woven substrate layer at the underside of said primary carpet fabric.

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37. The invention as recited in claim 1, wherein said mass of polymeric adhesive material substantially permeates and covers the layer of reinforcing material and extends in bonding relation between said primary carpet and said rebond foam cushion such that said primary carpet and said rebond foam cushion are adhesively bonded to one another by said mass of polymeric adhesive material and wherein a layer of textile backing material is bonded to said rebond foam cushion across the surface of said rebond foam cushion facing away from said polymeric adhesive material.

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38. The invention as recited in claim 1, wherein said rebond foam cushion comprises a polyurethane rebond foam having a chip size of about 10 mm or less.

20 39. The invention as recited in claim 38, wherein said polyurethane rebond foam is characterized by a density of not greater than about 20 lbs. per cubic foot.

40. The invention as recited in claim 39, wherein said polyurethane rebond foam is characterized by a density of about 6 to about 18 lbs. per cubic foot.

41. A cushion backed construction for floor coverings such as carpeting or carpet tile, comprising: a primary carpet, a polyurethane rebond foam cushion disposed at a position below said primary carpet, a mass of polymeric hot melt adhesive material disposed in bonding relation between said primary carpet and said rebond foam cushion and a layer of non-woven glass reinforcing material disposed within said mass of adhesive material such that at least a portion of said mass of adhesive material extends away from both sides of said layer of reinforcing material.

42. The invention as recited in claim 41, wherein the rebond foam cushion is characterized by a density of about 25 lbs. per cubic foot or less.

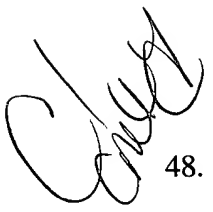
43. The invention as recited in claim 42, wherein the primary carpet is characterized by a face weight of less than or equal to about 15 oz/yd².

44. The invention as recited in claim 41, wherein the polymeric hot melt adhesive material is selected from the group consisting of: bitumen based hot melt adhesive; polyolefin based thermoplastic hot melt adhesive; and polyurethane hot melt adhesive.

45. The invention as recited in claim 44, wherein the polymeric hot melt adhesive is present at a level of less than or equal to about 50 oz/yd².

46. The invention as recited in claim 45, wherein the polymeric hot melt adhesive is present at a level of about 36 – 50 oz/yd².

5 47. The invention as recited in claim 41, wherein the polyurethane rebond foam cushion comprises at most 50% unfilled polyurethane (Prime urethane) and at least 10% polyurethane foam chips.

 48. The invention as recited in claim 47, wherein said polyurethane rebond foam cushion has a density of about 6 lbs./per cubic foot and a polymer weight within the construction of about 2.88 – 8.64 oz/yd².

10 49. The invention as recited in claim 41, wherein the polyurethane rebond foam cushion has a density of about 6 – 20 lb./cu. ft.

15 50. The invention as recited in claim 41, wherein the primary carpet is a tufted carpet including a non-woven backing and a latex adhesive pre-coat.

20 51. The invention according to claim 41, wherein a textile backing material is disposed across the underside of said polyurethane rebond foam cushion.

52. A method of forming a carpet comprising the steps of: adhesively bonding a sheet of non-woven glass reinforcement material to the underside of a primary carpet fabric by means of a polymeric adhesive such that said polymeric adhesive substantially encloses and extends away from both sides of said sheet of non-

woven glass reinforcement material ; and adhesively bonding a layer of cushioning rebond foam at a position below the non-woven glass reinforcement material such that said polymeric adhesive extends substantially between said cushioning rebond foam and said primary carpet fabric.

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53. The method as recited in claim 52, wherein said polymeric adhesive is a hot melt adhesive.

54. A method of forming a cushion backed carpet composite comprising the steps of :
forming an adhesive backed preliminary laminate composite by adhesively bonding a layer of glass reinforcement material to the base of a primary carpet fabric by means of a polymeric adhesive such that said polymeric adhesive substantially surrounds said glass reinforcement material so as to extend away from both sides of the glass reinforcement material; and thereafter placing the adhesive backed preliminary laminate composite into contacting relation with a layer of polyurethane rebond foam.

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55. The method as recited in claim 54, wherein the polymeric adhesive comprises a hot melt adhesive.

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56. A carpet produced by the method according to claim 54.

57. A dimensionally stable cushioned carpet tile suitable for disposition as discrete modular units across a flooring surface, the carpet tile comprising:

a primary carpet fabric having a pile side and a primary base with a plurality of pile forming yarns projecting outwardly from the pile side;

a rebond foam cushion layer disposed at a position below the primary carpet fabric;
and

5 a bridging composite extending in bonding relation substantially between the primary base and an upper side of the rebond foam cushion layer wherein the bridging composite consists essentially of a layer of stabilizing material having a first side and a second side, a first layer of at least one resilient adhesive extending away from the first side of the stabilizing material into contacting relation with the primary base and a second layer of at least one resilient adhesive extending away from the second side of the layer of stabilizing material into contacting relation with the upper side of the rebond foam cushion layer such that the layer of stabilizing material is bonded between the first and second layers of resilient adhesive at a position removed from both the primary base and the rebond foam cushion layer.

15 58. The invention as recited in claim 57, wherein the primary carpet fabric is a tufted carpet and wherein the primary base comprises a primary backing and a layer of adhesive pre-coat extending across the underside of the primary backing.

20 59. The invention as recited in claim 58, wherein the adhesive pre-coat comprises a latex adhesive.

60. The invention as recited in claim 58, wherein the adhesive pre-coat comprises a hot melt adhesive.

61. The invention as recited in claim 60, wherein the hot melt adhesive is bitumen based hot melt adhesive.

5 62. The invention as recited in claim 60, wherein the hot melt adhesive is a polyolefin based hot melt adhesive.

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63. The invention as recited in claim 60, wherein the hot melt adhesive is a polyurethane hot melt adhesive.

10 64. The invention as recited in claim 57, wherein the primary carpet fabric is a bonded carpet.

15 65. The invention as recited in claim 57, wherein the rebond foam cushion layer comprises polyurethane rebond foam characterized by a density of about 6 to about 20 lbs. per cubic foot.

20 66. The invention as recited in claim 65, wherein the rebond foam cushion layer comprises polyurethane rebond foam characterized by a density of about 8 to about 10 lbs. per cubic foot.

67. The invention as recited in claim 57, wherein the first layer of at least one resilient adhesive comprises a hot melt adhesive.

68. The invention as recited in claim 67, wherein said hot melt adhesive is bitumen based hot melt adhesive.

69. The invention as recited in claim 67, wherein said hot melt adhesive is a polyolefin based hot melt adhesive.

70. The invention as recited in claim 67, wherein said hot melt adhesive is polyurethane hot melt adhesive.

71. The invention as recited in claim 67, wherein the primary base comprises a primary backing and a layer of latex adhesive pre-coat extending across the underside of the primary backing.

72. The invention as recited in claim 67, wherein the primary base comprises a primary backing and a layer of hot melt adhesive pre-coat extending across the underside of the primary backing.

73. The invention as recited in claim 67, wherein the second layer of at least one resilient adhesive comprises a hot melt adhesive.

74. The invention as recited in claim 73, wherein said hot melt adhesive is bitumen based hot melt adhesive.

75. The invention as recited in claim 73, wherein said hot melt adhesive is polyolefin based hot melt adhesive.

5 76. The invention as recited in claim 73, wherein said hot melt adhesive is polyurethane hot melt adhesive.

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77. The invention as recited in claim 73, wherein the combined mass of the first layer of at least one resilient adhesive and the second layer of at least one resilient adhesive is not greater than about 50 ounces per square yard.

10 78. The invention as recited in claim 57, wherein the stabilizing material comprises a sheet of non-woven glass.

15 79. The invention as recited in claim 78, wherein the first layer of at least one resilient adhesive comprises a hot melt adhesive and the second layer of at least one resilient adhesive comprises a hot melt adhesive.

20 80. The invention as recited in claim 79, wherein the stabilizing material substantially separates the first layer of at least one resilient adhesive from the second layer of at least one resilient adhesive.

81. The invention as recited in claim 57, further comprising a backing structure disposed across the lower side of the rebond foam cushion layer.

82. The invention as recited in claim 81, wherein the backing structure comprises a multi-component composite.

83. The invention as recited in claim 82, wherein said multi-component composite comprises a layer of adhesive disposed adjacent the lower side of the rebond foam cushion layer.

84. The invention as recited in claim 83, wherein said layer of adhesive disposed adjacent the lower side of the rebond foam cushion layer is present at a level of not greater than about 20 ounces per square yard.

85. The invention as recited in claim 81, wherein said backing structure comprises a multi-component composite including a quick release backing.

86. A process for producing a carpet composite comprising the steps of:
modifying a rebond pad of approximately 10-13 pounds/cubic foot density to have a respective non-woven material bonded to each of the upper and lower surfaces thereof and with the composite rebond pad having a thickness of approximately .25 inch, slitting the composite rebond pad in half, producing two foam backings, each approximately .125 inch thick with a non-woven material attached to one surface, bonding the slit pad using a hotmelt adhesive to at least one of a pre-coated tufted carpet and a latex based bonded carpet.